NEW BAND SYSTEMS OF YbF MOLECULE IN THERMAL EMISSION

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Thermally excited spectrum of the Ytterbium monofluoride (YbF) molecule has been examined in the spectral region 4500-5900 Å at a reciprocal linear dispersion of 3.7 Å/mm using high temperature vacuum graphite furnace at 2000 °C and two meter Plane Grating Spectrograph (PGS-2). A total of 205 single and double headed, violet degraded bands have been recorded, out of which 121 are new. The observed bands have been classified into already reported systems and one entirely new system. The vibrational analyses performed suggest that the systems arise from ground state $^2\Sigma$. The following vibrational constants have been from the analyses:

System	Region	ω_e'	$\omega_e' x_e'$	ω_e''	$\omega_e'' x_e''$	ν_{00}
A-X	$\lambda\lambda$5250 - 5900 Å	528.0	2.00	506.0	1.90	18105.0
B_1-X	$\lambda\lambda$4800 - 5300 Å	531.4	2.70	504.0	2.60	19450.0
B_1'-X	$\lambda\lambda$4800 - 5300 Å	544.0	3.85	505.5	1.90	19468.0
B_1-X	$\lambda\lambda$4300 - 4900 Å	526.0	2.60	505.5	1.90	21073.0